# Force Health Protection

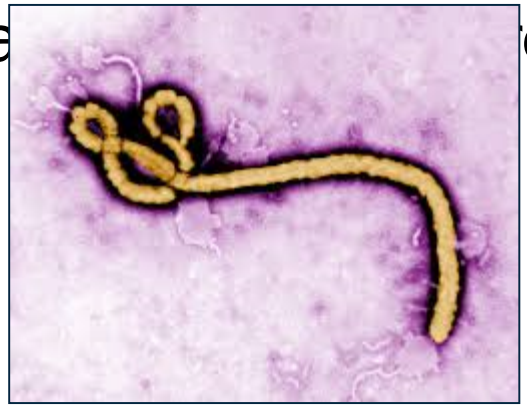
## for Non-Medical Personnel responding to Ebola in Liberia

Presentation prepared by NEPMU-2

Photo by MCC Greg Badger, USN

# Objectives

- Learn history of Ebola and scope of the current problem
- Understand how Ebola is spread and how you can protect yourself
- Review standa egion of Africa



# Ebola - History

# Ebola - History

- First outbreaks in **1976**, in **remote jungle villages**:
  - Former **Zaire**, now Democratic Republic of Congo (DRC)
    - 318 patients
    - 9 of 10 sick people died. (Mortality 90%)
  - **Sudan**, less deadly strain of virus
    - 284 patients
    - Mortality 50%
- Scattered outbreaks in the jungles over last 40 years
  - Numbers: 6 – 425 persons in each outbreak
  - Mortality: 25% - 80%

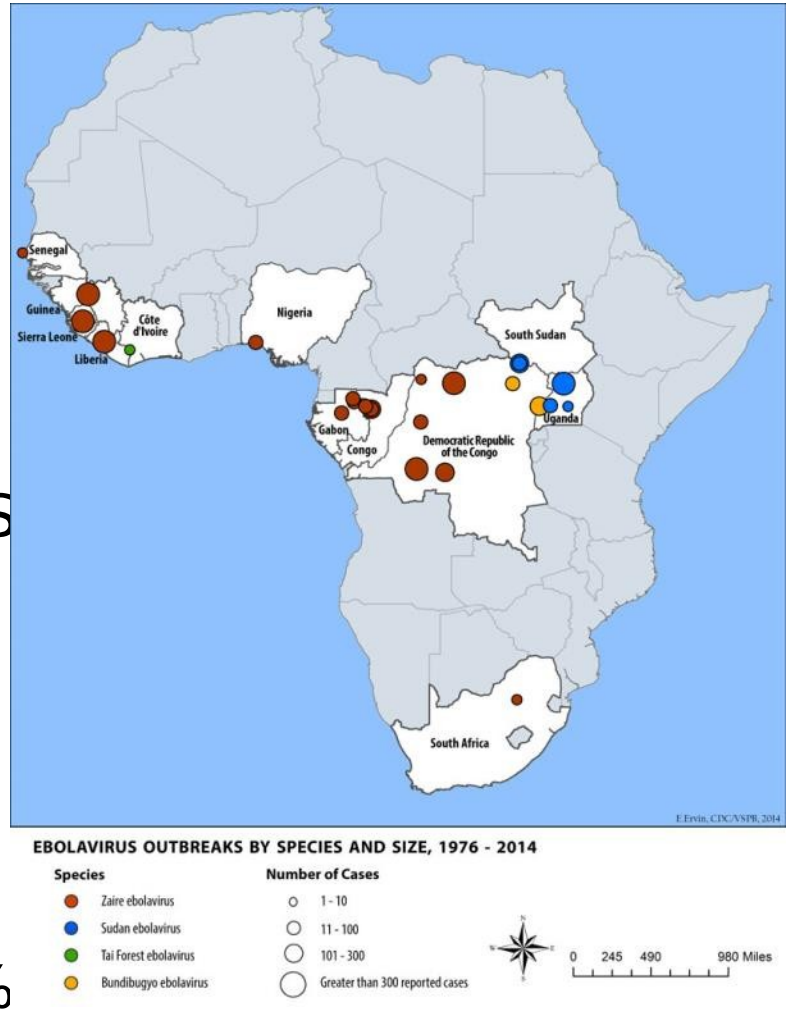
# Ebola - History

Current outbreak began in **Dec 2013**

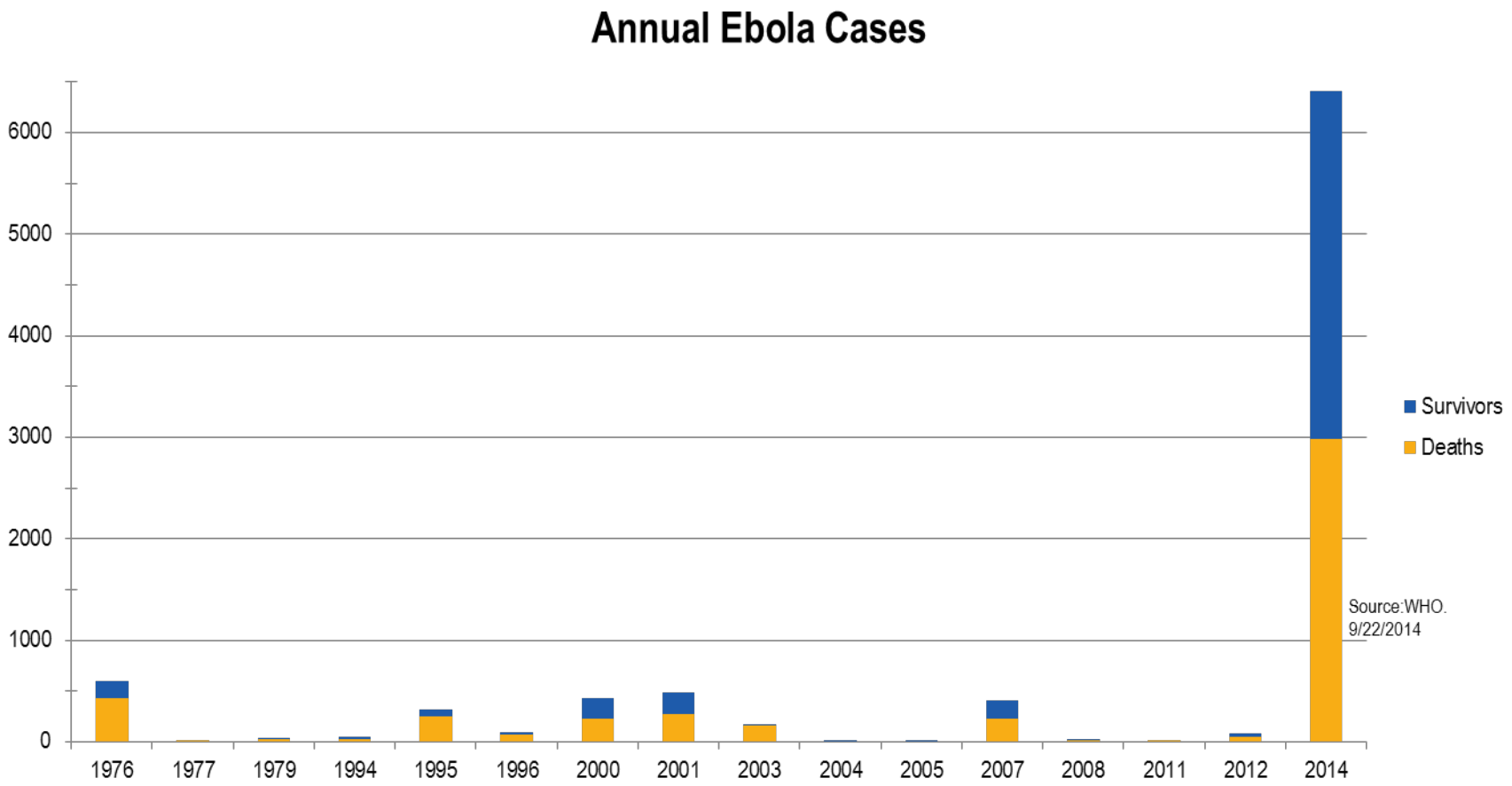
- In remote forested area of **Guinea**
  - Not immediately recognized as Ebola
- **World Health Organization (WHO)** notified **M**
  - 50 cases
  - By end of March, spread to **Liberia**
- In **May** first cases were confirmed in **Sierra Leone**
- In **July** spreads to **Nigeria** by person on a plane
- **August:**
  - **WHO** declares Public Health Epidemic of International Significance
  - Slowing in Guinea & Nigeria -- but Liberia out of control; new case in **Senegal**
  - Ebola outbreak begins in **DRC**

# Ebola – What's different now

- Region
  - West Africa
  - Urban
- Scale of outbreak
  - >6,000 patients as of 21 S
    - Guinea:  1022
    - Liberia:  3280
    - Nigeria:  20
    - Senegal:  1
    - Sierra Leone: 1940
- Mortality ***not*** changed:  50%



# Ebola – What's different now



# What is Ebola?

✓ *Knowledge check*: **True** or **False**

- It is a **hemorrhagic** disease, meaning is causes bleeding.
- It is a **brain** disease, like meningitis
- It is a **diarrheal** disease.
- It's a **naturally occurring**
- It is a biological **weapon**.

Photo by Abbus Dulleh - AP

# What is Ebola?

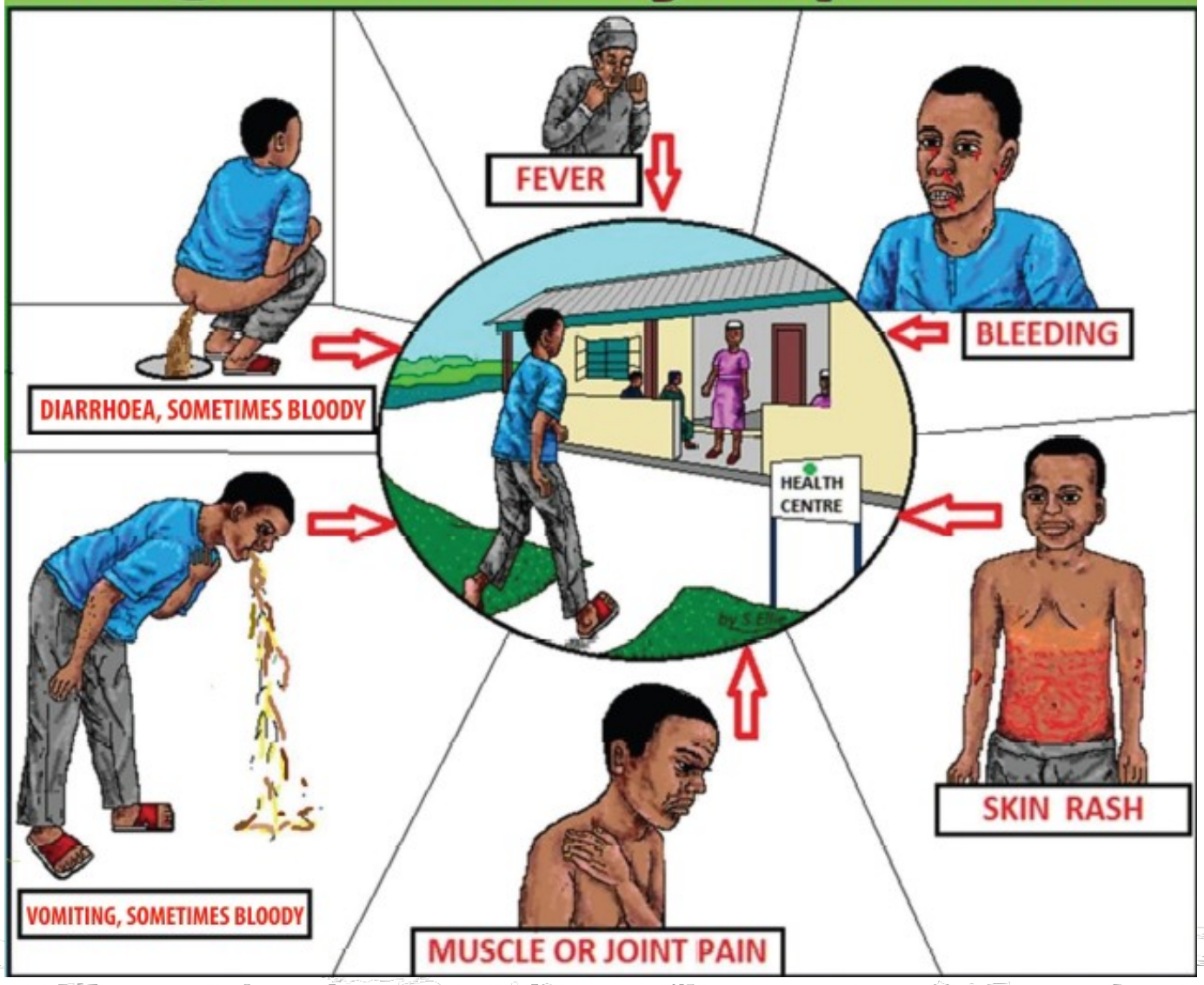
- It is a **hemorrhagic** disease, meaning it causes <u>bleeding</u>.
  - ✓**True** – *but **NOT** most of the time!*
- It is a **brain** disease, like meningitis.
  - ✓**False**
- It is a **diarrheal** disease.
  - ✓**True**
- It is a **naturally occurring** disease.
  - ✓**True**
- It is a biological **weapon.**
  - ✓**False** – not at this time, but has potential

# Take-with-you lesson

- People with Ebola **look sick**
  - Sudden onset **Fever** and **Headache**
  - **Diarrhea**
  - **Pain**
  - Vomiting
  - Red Eyes
  - Rash
  - Bloody Nose

- ***Don't*** expect people to see people bleeding

# Signs and Symptoms



# How is Ebola spread?

✓ *Knowledge check*: **True** or **False**

- By **eating** contaminated bush meat (e.g., bats)
- Person-to-person through the **air**
- Person-to-person by **direct contact with blood** or other internal body fluids
- Person-to-person by **touching soiled objects** like clothes, bed linens, or used Band-aids.
- Person-to-person by **casual contact**

# How is Ebola spread?

- By **eating** contaminated bush meat
  - ✓ **True** – heavily suspected, but more likely due to preparation and handling of meat
- Person-to-person through the **air**
  - ✓ **False**
- Person-to-person by **direct contact with blood** or other internal body fluids
  - ✓ **True**
- Person-to-person by **touching soiled objects** like clothes
  - ✓ **True**
- Person-to-person by **casual contact**
  - ✓ **True**
  - ✓ ***Ebola virus is present in sweat and tears***.

# Take-with-you lesson:

Avoid contact. No hugs or handshakes!
AP Photo – Abbus Dulleh
Fairy
EBOLA VIRUS
EBOLA IS A DEADLY VIRUS. IT SPREADS QUICKLY AND KILLS!
HOW TO PREVENT IT FROM SPREADING

# How is Ebola spread?

✓ *Knowledge check*: **True** or **False**

- Ebola virus is still active in **dead bodies**.

Photo by John Moore - Getty Images

# How is Ebola spread?

- Ebola virus is still active in **dead bodies**.
  - ✓ **True**
  - ✓ Handling of dead bodies is a major risk for getting Ebola.

Photo by Jason Beaubien - NPR

Photo by Katherine Mueller, IFRC

# Take-with-you lesson:

- You are Americans and represent the pinnacle of medical care.
- People may bring sick, dying, or dead patients to you.
- **Do not touch sick, dying, or dead people.**
  - This may be very har

*What if it's a dying ch*

Photo by Daniel Berehulak, *The New York Times*

- Put up a perimeter.
- Call security and medical

# How do the people of Liberia feel?

Photo by Daniel Berehulak, *The New York Times*

- ✓ *Knowledge check*:
  **True** or **False**
  - Disheartened
  - Disbelieving
  - Encouraged
  - Terrified
  - Brave

# How do the people of Liberia feel?

- Disheartened
  - ✓ True The epidemic is not being contained and is growing out of control.
- Disbelieving and Distrusting
  - ✓ Partially True There are myths that there is no Ebola but that “Westerners want our blood” or are trying to take over.
- Encouraged
  - ✓ True The support from the USA gives them hope.
- Terrified
  - ✓ True The high death rate is very scary. People will abandon family members.
- Brave
  - ✓ True The majority of Ebola workers are

Photo by Conakry Resilience System

# How worried should you be?

✓ *Knowledge check*: **True** or **False**

- If I take the **vaccine**, I won't get Ebola.
- If I get Ebola, I will **die**.
- If I avoid **touching people**, I am unlikely to get Ebola.
- I should see a healthcare provider immediately for **any fever**.

# How worried should you be?

- If I take the vaccine, I won't get Ebola.
  - ✓ **False** Vaccines are in development but not available yet.
- If I get Ebola, I will die.
  - ✓ **False** Mortality is 50% overall, but much less for Westerners who have been evacuated to developed countries.
- If I avoid touching people, I am unlikely to get Ebola.
  - ✓ **True** This is how family members avoid spreading disease.
- I should see a healthcare provider immediately for any fever.
  - ✓ **True** ***Seek early care if you feel sick***!
    - ***This applies up to <u>3 weeks</u> after you leave Liberia also***.

# How worried should you be?

- ✓ *Knowledge check*: **True** or **False**
  - Ebola is the biggest threat to my life in Liberia.

# How worried should you be?

- Ebola is the biggest threat to my life in Liberia.

**FALSE !**

# You are more likely to die from….

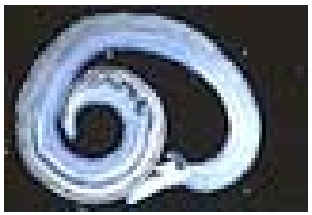
# You are more likely to die from….

- **Motor Vehicle Collisions**
  - The #1 non-combat killer of troops OCONUS

- **Malaria**
  - There have been **10x as many deaths** in Liberia this year from Malaria than from Ebola.
  - High death rate even though adult Liberians are partially protected due to exposure to malaria throughout their lives
    - YOU do NOT have this type of protection!

# The Enemy

Sand Fly
*Leishmaniasis



Schistosomiasis
* Water exposure

Black Fly
*Onchoceriasis

Human
*HIV
*TB
*Syphilis
*Gonorrhea
*Menengococcus
*Hepatitis B/D, C
*Motor Vehicles

Tse Tse Fly
*Trypanosomiasis

Aedes Mosquito
*Yellow Fever
*Chikungunya
*Dengue Fever

Culex Mosquito
*WNF
*RVF
*Elephantiasis

Anopheles Mosquito
*Malaria

# Ewww….

# Protection Against Disease

Individual Dynamic Adsorption Kit (IDAK)

Permethrin

permethrin on uniform

+

DEET on exposed skin

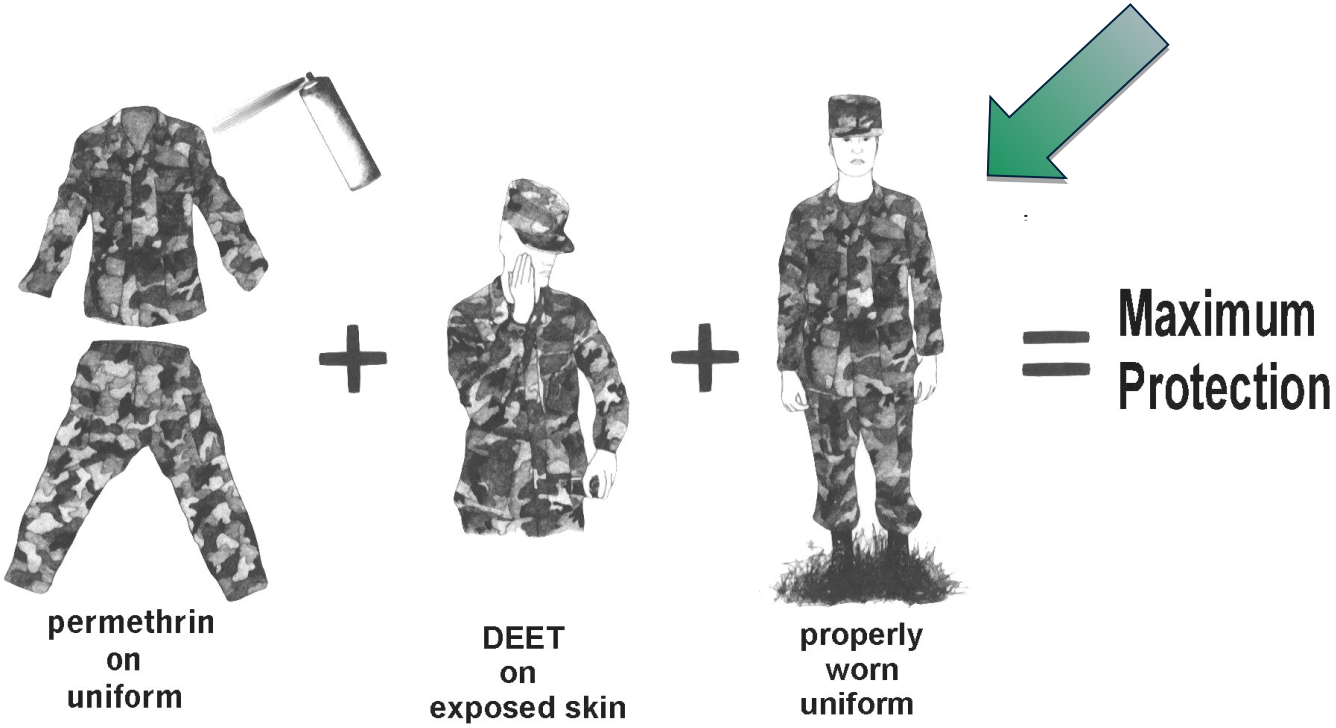
+

properly worn uniform

= Maximum Protection

# Protection Against Disease

Be careful about the heat.
- ✓Take breaks.
- ✓Hydrate.
- ✓Avoid alcohol at night.
- ✓Think of the healthcare workers in their protective plastic get-ups!



# Protection Against Disease

# Force Health Protection

- **Pre-Deployment**
  - Pre-Deployment Health Assessment
    - Screening and Testing:  HIV, PPD, G6PD, Blood type
  - Ensure Immunizations
    - Anthrax, Hep A, Hep B, Influenza, Meningococcal, MMR, Polio (must have an adult booster), Tetanus, Typhoid, Yellow Fever
    - Must have documented on **official Yellow Card**
  - Medications for prevention of malaria (chemoprophylaxis)
  - Procure Personal Protective Supplies
    - DEET, Permethrin on Uniforms, Bed nets,
    - Sunscreen, Lip balm, Sunglasses
    - Hardhats, Leather gloves, Safety glasses, N95s

# Force Health Protection

- **During Deployment**
  - Use personal protective measures
    - DEET, properly worn uniform, bednet
  - Take malaria chemoprophylaxis properly
  - Avoid:
    - Contact with lakes, rivers, streams
    - Local animals, plants
  - Consume ***only*** US approved food, water, and ice
    - If you get Traveler's Diarrhea, assume Ebola until proven otherwise!
  - Conduct proper field sanitation and hygiene
    - Hand washing, field latrines, solid waste removal, eliminate food waste

# Force Health Protection

- **Post-Deployment**
  - Fever watch
    - Continue for 21 days after return for Ebola
    - Continue for 2 months for Malaria
  - Post-Deployment Health Screen Assessment
    - HIV, PPD (8 weeks after return)
  - ***Complete*** post-exposure malaria prevention medication
  - You will see extreme poverty and primitive conditions. These may weigh on you. Consider counseling as needed.

# Malaria Chemoprophylaxis

- **Recommended Regimen: Malarone**
  - One tablet per day
  - Start 2 days prior to departure
  - Continue until 7 days after return

- **Alternate**: **Doxycycline**
  - One tablet per day
  - Start 2 days prior to departure
  - Continue until 4 weeks after return

- **With either Regimen: Primaquine** (terminal prophylaxis)
  - One tablet per day
  - Begin on day of return
  - Continue for 14 days (concurrently with malarone or doxycycline)

# Your resources:

- NEPMU-2
  - Main number:  757-953-6600 (DSN 377-6600)
  - CDO: 757-284-0605
  - Prev Med Officers:
    - NEPMU2Norfolk-Threat-MedEpi@med.navy.mil
- NEPMU-7
  - LT David Veenhuis (EHO)
  - david.veenhuis@eu.navy.mil
- NAVEUR/AF
  - LCDR Alecia Mingo
  - alecia.mingo@eu.navy.mil